

# **Ozark-St. Francis National Forests**

## **Monitoring & Evaluation Report 2002**



## CERTIFICATION

I have evaluated the monitoring results and recommendations in this Report. I have directed the Action Plans developed to respond to these recommendations be implemented according to the time frames indicated, unless new information or changed resource conditions warrant otherwise. I have considered funding requirements in the budget necessary to implement these actions.

When all recommended changes to the Forest Plan have been implemented, the Plan will be sufficient unless ongoing monitoring and evaluation identify further need for change.

/s/ Charles S. Richmond  
CHARLES S. RICHMOND  
Forest Supervisor

5/28/03  
DATE

## Executive Summary

The Ozark-St. Francis National Forests published the Notice of Intent in the Federal Register on May 1, 2002, which officially started the Plan Revision process.

Activities from this current (2002) Monitoring and Evaluation Report which require action:

- Summarize water monitoring for herbicides from 1991+ and emphasize Best Management Practices (BMPs) to avoid off-site movement of herbicide residue.
- Revise the Fire Management Action Plan in FY 2003.
- Adjust suppression responses to fires in oak mortality areas.
- Continue to implement the Recreation Realignment Action Plan to bring the recreation program in line with the Forest's Niche Statement.
- Continue to emphasize Land and Resources Management Plan (LRMP) goals for timber offered, acres regenerated, and timber stand improvement work.

Items from the 2001 Monitoring and Evaluation Report that were completed in 2002:

- A Biological Opinion was signed by the United States Fish and Wildlife Service (USFWS) removing the 30,000 acre cap for prescribed burning on the Forests and concluding that continued management under the current Forest Plan will not jeopardize the existence of the Indiana Bat.
- An Oak Mortality Implementation Plan has been proposed, and other actions are underway to reduce safety hazards and salvage merchantable material.

Items in prior Action Plans that have still not been completed:

- Development of Limits of Acceptable Change standards has ceased since there is no Wilderness Coordinator on the forests.
- Rotary Ann and Cove Lake facility designs are being finalized for contracting in FY 2003.
- A fisheries assessment and management plan for the forest has been started.
- Future management of proposed special interest areas, management indicator species, ecosystem restoration, and prescribed fire will be deferred until revision of the Forest Plan.
- The forests should work with user groups to identify potential areas for development of future ATV trails.

OZARK-ST. FRANCIS NATIONAL FORESTS  
FOREST PLAN MONITORING AND EVALUATION PLAN

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# I. Introduction

This report documents Forest Plan monitoring and evaluation for Fiscal Year 2002 (October 1, 2001 - September 30, 2002). Annually, the Ozark-St. Francis National Forests review and evaluate programs and projects to determine if these activities met Forest Land Resource Management Plan (LRMP) direction. This review by Forest Staff and District Rangers determines if we achieve Forest Plan goals and objectives, if we properly implement management requirements, and if environmental effects occur as predicted in the Plan.

**Section II** presents monitoring and evaluation results identified in the Monitoring and Evaluation Schedule in Chapter 5 of the Forest Plan. This section is organized by program area and items to be monitored under each program. The information includes:

- **The item being monitored.**
- **Variance Allowed** - The threshold of change allowed for the project or program from the direction set in the Forest Plan that, if exceeded, would call for further action.
- **Findings** - Documentation of the monitoring results.
- **Recommendations** - The actions that the Forest Planning Staff recommends to the Forest Supervisor and Leadership Team after evaluation of the Findings. The Forest Leadership Team then either approves or changes the recommendations. Possible recommendations include: (1) none, (2) increase effort to achieve the objective or comply with management direction and Standards and Guidelines, (3) amend the Forest Plan to clarify or improve resource management, or (4) further study to determine the best action to take.

**Section II** also presents monitoring and evaluation results of Forest Plan Management Requirements. The information includes:

- The complete **Management Requirement** as it is shown in the Forest Plan.
- **Findings** - The documented results of the monitoring efforts from previous year.
- **Recommendation** - Recommended action to be taken by the Forest Supervisor to address results of evaluating the previous year's findings.

In addition, the Forest Plan lists a series of goals or targets for various resources. **Section II** lists these goals, the accomplishments, and the recommendation to either change these Plan projections or to meet them in the future.

**Section III** is an action plan for items that require action.

## II. Detailed Monitoring and Evaluation Results and Report Findings

### A. Ecosystem Condition, Health, and Sustainability

The subject of Ecosystem Condition, Health, and Sustainability covers a range of topics including terrestrial wildlife and plant habitats and populations, forest and non-forest land cover, ecosystem and watershed conditions, aquatic resources, and forest health issues related to forest insects, diseases, and disturbance factors. The sustainability of ecosystems and the components of ecosystems are addressed within this subject.

Some items that showed no changes from previous M&E Reports were eliminated. Many items, especially in sections A-1 and A-2 will need to be addressed during the Forest Plan Revision, particularly where accomplishments are out of proportion to the goals predicted in the Forest Plan.

#### 1. Wildlife and Fish

##### Mammals

- a) **Species:** White-tailed Deer (LRMP, Chapter 5) (MIS-Demand Species)  
**Variance allowed:** A white-tailed deer population of 10,000 or less, forest-wide.  
**Findings:** Harvest data on the WMAs on the Forrests for 1975 – 2000 reflect a stable population. However, 2001-2002 season showed a decline in numbers. Because of changes in season length and bag limits over the years, it makes it difficult to develop a clear picture of the deer population. Incidental observations for field biologists from the Arkansas Game and Fish Commission (AG&FC) and the Forest Service would indicate a lower than normal population. The 2002 spotlight survey observations were the lowest ever recorded. It is not known what the impact from the oak decline will have on deer habitat.  
**Recommendation:** Keep as an indicator species. Continue to monitor populations and habitat condition. Create more early-seral habitat. Monitor oak decline impacts.
- b) **Species:** Indiana and Gray Bats (LRMP, Chapter 5) (MIS-Species of Concern)  
**Variance allowed:** An Indiana Bat population of 400 or less; a Gray Bat population of 200,000 or less, forest-wide.  
**Findings:** Bat populations are above thresholds. Annual monitoring conducted by Michael J. Harvey with Tennessee Tech. University, indicates that the Gray Bat population is increasing. Populations for Indiana Bats appear to be slightly decreasing.  
**Recommendation:** None.

- c) **Species:** Gray Squirrel (LRMP, Chapter 5) (MIS-Demand Species)  
**Variance allowed:** A gray squirrel population of 200,000 or less, forest-wide.  
**Findings:** FY 2002 was an excellent mast crop year, and it is expected that FY 2003 will reflect this with an increase in squirrel numbers. The increasing age-class distribution of the Forest represents improved habitat conditions. However, it is not known how the areas of oak decline will affect squirrel populations.  
**Recommendation:** Develop a protocol to better estimate population numbers.
- d) **Species:** Black Bear (LRMP, Chapter 5) (MIS-Demand Species)  
**Variance allowed:** A bear population of 60 or less, forest-wide.  
**Findings:** Ricky Eastridge, AG&FC Bear Specialist, indicates the bear population is above 2,000 and growing, well above threshold levels. The total bear harvest was 220 with 163 harvested from Zone 1, which includes most of the Ozark NF. The abundance of mast this year made hunting bear more difficult because they were less concentrated.  
**Recommendation:** None.

### **Birds**

- e) **Species:** Wild Turkey (LRMP, Chapter 5) (MIS-Demand Species)  
**Variance allowed:** A turkey population of 8,000 or less, forest-wide.  
**Findings:** Harvest records from 1975 to present show an increasing trend for the entire State as well as the Forest Service Wildlife Management Areas (WMAs). The State's Brood Survey for 2002 reflects a below average year, but the excellent mast crop indicates that 2003 should be another good year for turkey. It is not known what effects oak decline will have on the population, but reduction in mature oaks would probably have a negative impact.  
**Recommendation:** None.
- f) **Species:** Pileated Woodpecker (LRMP, Chapter 5) (MIS-Ecological Indicator)  
**Variance allowed:** A population of 3,800 or less, forest-wide.  
**Findings:** Annual monitoring and breeding bird surveys show that Pileated Woodpeckers are common and increasing. This includes point counts, Christmas bird counts, migration counts, and biological evaluation field notes. Oak decline will temporarily improve habitat.  
**Recommendation:** None.
- g) **Species:** Rufous-Crowned Sparrow (LRMP, Chapter 5) (MIS-Species of Concern)  
**Variance allowed:** A decline in population over the past three years.  
**Findings:** This species is extremely rare and found only in a small area of Mount Magazine in very small numbers. Numbers have remained fairly constant since 1972. Don Simons with Mount Magazine State Park reported hearing at least five singing males in 2002, which reflects an increase in numbers. He suggested the increase could be related to habitat improvement work (prescribed burning and cedar removal) that has been done in the area.  
**Recommendation:** None.

- h) **Species:** Yellow-Breasted Chat (LRMP, Chapter 5) (MIS-Ecological Indicator)  
**Variance allowed:** A decline in the population for three consecutive years.  
**Findings:** Annual monitoring and breeding bird surveys indicate a generally stable trend in populations. Habitat appears to be declining due to decreasing timber management activities. Oak decline, however, could increase habitat.  
**Recommendation:** None.
- i) **Species:** Red-Shouldered Hawk (LRMP, Chapter 5) (MIS-Ecological Indicator)  
**Variance allowed:** A decline in the population for three consecutive years.  
**Findings:** Population numbers are relatively low but stable/slightly increasing on the forest.  
**Recommendation:** None.

### **Fish**

- j) **Species:** Smallmouth Bass (LRMP, Chapter 5) (MIS-Demand Species); Big-Eyed Shiner, Ozark Minnow, Creek Chub (LRMP, Chapter 5) (MIS-Ecological Indicator)  
**Variance allowed:** Sustained decline in water quality or population for three years.  
**Findings:** No water problems have been identified. Monitoring in 2002 was not sufficient to draw conclusions about the forest-wide status of populations and habitat conditions.  
**Recommendation:** Formulate a plan to begin assessing habitat conditions and population dynamics at geographic scales useful to land management planning.

### **Plants**

- k) **Species:** Ginseng, Alabama Snowreath, Ozark Chinquapin, Climbing Magnolia (LRMP, Chapter 5)  
**Variance allowed:** A 10% decline in population or suitable habitat.  
**Findings:** Illegal collection of ginseng continues and, based on field observations, there is an indication the population is decreasing. Permanent monitoring plots were established on the forest between 2001 and 2002. The overall threat to ginseng is still illegal harvest. Populations declined in the 2 to 3 pronged size category (largest, most valuable). At the same time, some plots increased in numbers in the smallest, least valuable plants. Populations of Snowreath, Chinquapin, and Climbing Magnolias appear to be stable.  
**Recommendation:** None.
- l) **Management Requirement:** Identify and protect threatened, endangered, and sensitive plants and animals and manage habitats.  
**Findings:** Formal consultation with the U.S. Fish and Wildlife Service (USFWS) on the effects of forest management on Indiana Bats was completed in 1998. The USFWS' opinion was that continued management under the current Forest Plan would not jeopardize the continued existence of the Indiana Bat. The Biological Opinion was amended on March 21, 2002, and management recommendations are being followed.  
**Recommendation:** None.



The following table summarizes additional wildlife and fish accomplishments.

<b>Plants</b>	<b>ITEM</b>	<b>PLAN PROJECTION Acres/year</b>	<b>ACCOMPLISHED IN 2002 Acres/Year</b>
m)	Prescribed Burning	600-1,000	2,883 (Wildlife Improvements)
n)	Wildlife Opening Maintenance	240	550
o)	Food Plot Maintenance	30	800
p)	Wildlife Opening Development	0-40	80
q)	Seeding and Planting	0-40	261
r)	Wildlife Stand Improvement	100-300	124
s)	Pond Construction	0-50	14
t)	Fish Cover Establishment	10	40 (Recommend surveys for needed structures)
u)	Non-Structural Fish Habitat Improvement	120	267 (lake fertilization and liming)

## 2. Range

The following table summarizes range accomplishments.

<b>Range</b>	<b>ITEM</b>	<b>PLAN PROJECTION</b>	<b>ACCOMPLISHED IN 2002</b>
a)	Grazing Capacity	N/A	All allotments within capacity. Demand declining
b)	Range Condition and Trend	N/A	No major changes
c)	Manage Range Program	N/A	Several allotments placed in inactive status
d)	Prescribed Burning for Forage Improvement	2,000 acres/year	0
e)	Bush-hogging for Range Improvement	2,000 acres/year	1,340 acres
f)	Pasture Fertilization	1,000 acres/year	1,390 acres
g)	Seeding Pastures for Forage Improvement	1,000 acres/year	0
h)	Fencing	7 miles/year	3.5 miles
i)	Pond Construction	10 ponds/year	5 ponds
j)	Corral Construction	2 corrals/year	1 corral
k)	Conversion of Fescue Pasture to Native Species	N/A	0 acres

### 3. Soil, Water and Air

- a) **Item:** All Ground Disturbing Activities That Have the Potential to Adversely Affect Soil Productivity (LRMP, Chapter 5)  
**Variance Allowed:** Minimum of 80% of an activity area will be left in a condition that does not decrease vegetative productivity following a soil-disturbing activity.  
**Findings:** A sample of six units by the soil scientist and district personnel showed that soil disturbance was within the standard.  
**Recommendation:** None.
- b) **Item:** All Ground Disturbing Activities That Have the Potential to Adversely Affect Water Quality and Riparian Areas (LRMP, Chapter 5)  
**Variance Allowed:** Deviation from water quality standards for designated uses or Best Management Practices (BMPs) not achieving desired condition.  
**Findings:** In road maintenance and construction, stream crossing, and timber sale projects, BMPs achieved their desired results, with some exceptions. Erosion control measures were not always properly applied to protect soil and water. Some road construction and maintenance projects did not adequately protect water quality due to inadequate implementation of BMPs.  
**Recommendation:** BMPs need to be emphasized in planning and implementing projects especially relative to drainage structure placement up-slope of stream crossings. Enforce erosion control clauses to reduce runoff during the construction phase of projects and during inactive periods of the contract. Project inspectors on roads and sale administrators on timber sales should use a checklist to assure protective measures are applied.
- c) **Item:** Water Quality Monitoring of at Least One Harvest Site Each Year (LRMP, Chapter 5)  
**Variance Allowed:** Significant impacts to the channel or biological indicators that exceed water quality standards.  
**Findings:** Monitoring BMP implementation on five projects showed most BMPs were implemented and effective.  
**Recommendation:** Forest Hydrologist will help districts identify streams that need protection during project planning.
- d) **Item:** Soil and Water Resource Improvements (LRMP, Chapter 5)  
**Variance Allowed:** A 30% project treatment area failure or deviation from water quality standards for designated uses.  
**Findings:** No major problems exist.  
**Recommendation:** None.

- e) **Item:** Herbicide Application Where There is a Risk of Off-Site Movement (LRMP, Chapter 5)  
**Variance Allowed:** Information showing persistent off-site movement.  
**Findings:** Thirteen water samples were collected below five silviculture projects in which herbicide had been applied. In 2002, there were positive levels of Triclopyr in seven samples, some of which were collected several months after treatment. This was due to contamination of the samples by not following correct sampling techniques.  
**Recommendation:** Summarize past results forest-wide to determine if sampling should continue or be modified. Districts need to apply BMPs and provide proper sampling protocol, as specified in the herbicide monitoring plan.
- f) **Item:** Water Quality at Developed Swimming Areas (LRMP, Chapter 5)  
**Variance allowed:** When monitoring indicates that water quality does not meet established State and Federal Standards for *E. coli* and fecal coliform bacteria.  
**Findings:** There were no beach closures this season.  
**Recommendation:** None.
- g) **Item:** Water Quality, Quantity, and Timing in Selected Representative Drainage Basins (Baseline Monitoring) (LRMP, Chapter 5)  
**Variance Allowed:** Any downward trend or lack of upward trend to achieve goals and objectives.  
**Findings:** No downward trends have been detected.  
**Recommendation:** None.
- h) **Item:** Air Quality (LRMP, Chapter 5)  
**Variance Allowed:** Air quality standards not being met, and air quality values being impaired.  
**Findings:** Fire Management Officer reviewed prescribed fire and smoke management plans to assure that activities met standards. The Forest continued ozone monitoring at Deer. All measurements were within National Ambient Air Quality Standards. The Interagency Monitoring of Protected Visual Environments (IMPROVE) site at Deer continues to gather visibility data.  
**Recommendation:** None.

#### 4. Protection

- a) **Item:** Fire Management Planning and Analysis (LRMP, Chapter 5)  
**Variance Allowed:** Significant deviations from Fire Management Action Plan.  
**Findings:** The prescribed burning program continues to grow on the Forest and National level. Prescribed burn accomplishments are currently listed in several program areas: wildlife, range, timber stand improvement, and fuel treatment. The National Fire Plan initiative is being implemented on the Forest with an emphasis on fuels reduction and management in the wildland-urban interface. A fuels assessment analysis is underway to address changing fuel profiles as a result of oak mortality.  
**Recommendation:** Fire Management Action Plan will be revised in FY 2003.

- b) **Item:** Fire Suppression (LRMP, Chapter 5)  
**Variance Allowed:** Significant deviations from Fire Management Action Plan objectives.  
**Findings:** There were 54 fires in CY 2002 burning 917 acres.  
**Recommendation:** Continue implementing the National Fire Management Analysis System (NFMAS) to provide adequate suppression resources across the forest. Adjust suppression responses to fires within existing oak mortality areas based on findings from the fuels assessment and the changed fuel profile within these areas.
- c) **Item:** Insect or Disease Symptoms and Damage (LRMP, Chapter 5)  
**Variance Allowed:** Determination that a pest population is likely to exceed endemic stages.  
**Findings:** Insect populations, particularly of the Red Oak Borer, far exceeded endemic levels and have resulted in light to severe oak mortality over a majority of the hardwood stands in the forest. A forest wide Oak Mortality Implementation Plan, tiered to the Ozark Highlands Oak Mortality Action Plan, is being implemented. Safety hazards are being reduced and actions are being taken using the best scientific knowledge to ensure oak sustainability.  
**Recommendation:** None.

## B. Sustainable Multiple Forest and Range Benefits

Sustainable Forest and Range Benefits are centered on the multiple forest products (commercial and noncommercial), services (such as recreation settings), and outputs (such as potable water) which provide a variety of benefits. This section addresses relationships of a growing society's needs for forest products and sustaining biological and social values within the capability of southern ecosystems.

### 1. Recreation, Heritage, and Wilderness

- a) **Item:** Developed and VIS Site Use (LRMP, Chapter 5)  
**Variance Allowed:** Annual use at a specific site less than 5% or more than 45% of theoretical capacity. A total use variance of 15% at 5-year intervals.  
**Findings:** The new information reporting systems are being incorporated into one system called Infrastructure 5.1.1.  
**Recommendation:** None.
- b) **Item:** Dispersed Area and Wilderness Use (LRMP, Chapter 5)  
**Variance Allowed:** When use by Recreation Opportunity Spectrum (ROS) class varies more than 15% at end of first 5-year Plan interval, and when trails, streams and special areas show excessive use or resource damage.  
**Findings:** Further development of the Limits of Acceptable Change (LAC) has ceased. This process is the responsibility of the Wilderness Coordinator, a position that does not exist on the Forest.  
**Recommendation:** None
- c) **Item:** Developed Site and Facility Condition (LRMP, Chapter 5)  
**Variance Allowed:** Deterioration or vandalism at greater than normal rate.  
**Findings:** Deterioration and vandalism occurred at about normal rates.  
**Recommendation:** None.

- d) **Item:** Dispersed Recreation Opportunity Classes (LRMP, Chapter 5)  
**Variance Allowed:** 15% ROS acreage change.  
**Findings:** Changes did not approach 15% in ROS classes forest-wide.  
**Recommendation:** None.
- e) **Item:** Off-Highway Vehicle Impacts (LRMP, Chapter 5)  
**Variance Allowed:** Documented user conflicts, photographic record of resource damage, and/or observation of public safety hazards.  
**Findings:** The Forest identified several areas of resource damage and developed rehabilitation plans. Mill Creek ATV area is currently open; planning work continued on Lee Creek system; and Brock Creek system is nearing completion.  
**Recommendation:** Identify potential areas for development of future ATV trails. The Road Analysis Process (RAP) will inventory existing use areas, determine effects, work with user groups, and designate trails with no adverse impacts or where effects can be mitigated.
- f) **Item:** Visual Quality (LRMP, Chapter 5)  
**Variance Allowed:** Projects that fail to meet adopted Visual Quality Objectives (VQO's).  
**Findings:** Forest continued to comply with VQO's.  
**Recommendation:** Include new Scenery Management System (SMS) guidelines in the Forest Plan revision.
- g) **Item:** Potential Wild and Scenic River Protection (LRMP, Chapter 5)  
**Variance Allowed:** Activity affecting free-flowing character or values.  
**Findings:** No known activities occurred in 2002.  
**Recommendation:** None.
- h) **Item:** Heritage Resource Compliance and Protection (LRMP, Chapter 5)  
**Variance Allowed:** Non-compliance with 36 CFR 800 and Forest Management Requirements.  
**Findings:** Programmatic agreements with the Caddo Tribe and the Choctaw Tribe were reviewed and signed. A conference was held in conjunction with the tribes and the Ouachita National Forest to promote this new process.  
**Recommendation:** None
- i) **Management Requirement:** Manage trail system to provide a variety of opportunities.  
**Findings:** Work continued on Brock Creek Multi-Use Trail and Sylamore Mountain Bike Trail. Little progress made on Lee Creek OHV Trail.  
**Recommendation:** None.
- j) **Management Requirement:** Maintain present developed site range and quality for public enjoyment in Management Area 3.  
**Findings:** Maintenance of developed sites continues at reduced service levels. Work with State Parks on the St. Francis-Mississippi River State Park continued. The recreation realignment workshop identified a number of developed recreation areas for further study to determine if keeping them open was financially sound or if closure or refocus of the use might be more appropriate.  
**Recommendation:** Award the contract for Rotary Ann project. Continue to implement the study action items of the Recreation Realignment Action Plan.

- k) **Management Requirement:** Provide and maintain safe attractive facilities at administrative sites (Management Area 6).  
**Findings:** The walkway at the picnic area at Alum Cove Day-Use Site is being restored. New bathhouses were completed at Horsehead and Blanchard campgrounds.  
**Recommendation:** None.
- l) **Plan Goal:** Trail Construction  
**Findings:** In FY 2002, the Forest constructed/reconstructed 8 1/2 miles of trail.  
**Recommendation:** Complete Brock Creek and Lee Creek trails.
- m) **Plan Goal:** Scenic Byways  
**Findings:** The FY93 recommendation that all management planning for the Scenic Byways be completed in FY94 has still not been accomplished.  
**Recommendation:** The contract to construct a new restroom, improve picnic facilities, parking, and overlooks along Scenic 7 Byway scheduled to be let in 1997 needs to be completed (Rotary Ann).
- n) **Plan Goal:** Developed Site Administration  
**Findings:** In FY 2002, the Forest continued the Recreation Fee Demonstration Project (RFDP) as a forest-wide program. Fourteen developed sites were included in the project. The resulting fees collected were \$689,221. Under the RFDP rules \$677,960 were returned to the Forest. Funds (\$705,471 – includes carryover from the previous years) were spent refurbishing and improving the fee areas. The Forest held a Recreation Realignment Workshop, which developed a Recreation Niche Statement for the Forest (Appendix F). This statement focuses the recreation program in the areas of nature related sightseeing with roads and trails providing the access to the forests' special features; day use activities related to lakes, rivers, and streams and dispersed recreation such as hunting and fishing.  
**Recommendation:** Continue RFDP and seek to bring other sites into the program. Continue to implement the Recreation Realignment Action Plan to bring the developed recreation program in line with the Niche Statement.
- o) **Plan Goal:** Heritage Resource Inventory of 6,500 acres completed as project needs.  
**Findings:** Archaeologists completed inventory on 33,835 acres, 34 projects with 102 sites and 27 sites eligible for Historical Register. Three sites were stabilized. Program goal should be to comply with NEPA and Section 106 with a balance between inventory, evaluation, protection, management, and interpretation rather than 12,000-acre inventory activity level annually.  
**Recommendation:** None.

## 2. Timber

- a) **Project:** Total Volume Offered (Volume Sold) (LRMP, Chapter 5)

**Variance Allowed:** 15% at 5-year intervals.

**Findings:** FY92 M&E Report recommended selling no more than an average of 9.6 million cubic feet (MMCF) annually for the remainder of the plan period. Volume sold in FY 2002 complies with this recommendation.

The total volume sold through the first 15 years (FY 87 - FY 2002) is 128.0 MMCF or 62% of the planned amount for this period. The downfall is due to reduced volumes sold in FY90 – FY95 and FY99-FY 2001 as a result of administrative appeals, lawsuits, and reduced funding for subsequent years.

Total volume offered is not within the allowable 15% variance after 16 years. Target allocation for FY 2002 is expected to be 8.2 MMCF.

**Recommendation:** LRMP goals should be emphasized.

- b) **Item:** Silvicultural Exams and Prescriptions (LRMP, Chapter 5)

**Variance Allowed:** 15% at 5-year intervals.

**Findings:** After 16 years, the Forest has accomplished 53% of the planned acreage. Shortfall is due to inadequate funding and personnel allocations. Districts will continue to examine and prescribe the maximum acreage possible within approved funding levels.

**Recommendation:** None.

- c) **Item:** Reforestation (LRMP, Chapter 5)

**Variance Allowed:** 15% at 5-year intervals.

**Findings:** After 16 years, 65,653 acres have been reforested compared to a projected 85,360 acres. This is 77% of planned. The 3,302 acres reforested in FY 2002 was below the plan projection of 4,820 acres. Shortfall was due to inadequate funding and personnel allocations.

**Recommendation:** None.

- d) **Item:** Regeneration (LRMP, Chapter 5)

**Variance Allowed:** 15% at 5-year intervals.

**Findings:** During the 16 years of the Plan, the Forest sold 36,683 even-aged regeneration acres compared to a projected 66,400 acres (55% of the acreage planned). Use of uneven-aged harvest methods has been considerably lower than planned. Hardwood group selection cutting was at 31% of planned, and pine selection cutting was at 32% of planned after 16 years.

**Recommendation:** LRMP goals should be emphasized.

- e) **Item:** Timber Stand Improvement (LRMP, Chapter 5)

**Variance Allowed:** 15% at 5-year intervals.

**Findings:** TSI accomplishment is well below Plan projections.

**Recommendation:** LRMP goals should be emphasized.

- f) **Item:** Maximum Size Limits (LRMP, Chapter 5)

**Variance Allowed:** None. Maximum size limits of regeneration areas should not conflict with achieving Forest Plan objectives and desired future condition.

**Findings:** No areas have exceeded limits stated in the Forest Plan, which are 50 acres for pine and 30 acres for hardwood regeneration areas.

**Recommendation:** None.

### 3. Facilities

- a) **Project:** Road Reconstruction and Construction - Comparison of projected average annual construction/reconstruction vs. actual accomplishments in miles. (LRMP, Chapter 5)  
**Variance Allowed:** 15% at 5-year intervals.  
**Findings:** The amount of road construction and reconstruction was less than projected in the Plan primarily due to timber sale need changes.  
**Recommendation:** None.

## C. Organizational Effectiveness

This section addresses agency and cooperator related inputs and constraints: changes in laws, regulations, policy, and the agency's ability to respond to emerging issues and changing conditions to implement the Forest Plan.

The Ozark-St. Francis National Forests published the Notice of Intent (NOI) in the Federal Register on May 1, 2002, which officially started the Plan Revision process.

Monitoring and evaluation of various items indicate some are not meeting the outputs predicted in the existing Plan. The original intent was to update or change these items during Forest Plan Revision. The Forests will continue to identify critical changes and modify the existing plan through amendments, where necessary.

The Forests planned to develop a Vision 2005 organizational structure, but this has not been done.



**TABLE I**

**ACTUAL FOREST EXPENDITURES COMPARED TO FOREST PLAN BUDGET**

<b><u>ACTIVITY</u></b>	<b><u>FOREST PLAN BUDGET<sup>1</sup></u></b>	<b><u>ACTUAL 2002 EXPENDITURES<sup>2</sup></u></b>
Timber	\$4,607,000	\$5,253,000
Wildlife / Fish / PETS	807,000	884,000
Recreation/ Wilderness / Heritage <sup>3</sup>	1,986,000	2,376,000
Law Enforcement	0	118,000
Fire	1,490,000	1,973,000
Lands	419,000	565,000
Minerals	284,000	272,000
Engineering <sup>4</sup>	3,886,000	3,199,000
Soil / Water / Air	387,000	160,000
Cost Pools <sup>5</sup>	1,925,000	4,225,000
Range	85,000	138,000
Ecosystem Inventory, Monitoring, Planning <sup>6</sup>	1,312,000	1,555,000
<b>TOTAL</b>	<b>\$17,188,000</b>	<b>\$20,718,000</b>

- <sup>1</sup> The figures in this column represent about a 3% annual increase above 1998 "Level 3" budget, which was based on "Level 3" funding in 1996.
- <sup>2</sup> FY 2002 expenditures included \$1,101,000 of funding for the oak mortality project – special funds above normal appropriations. These were funded in timber; recreation/wilderness/heritage; and ecosystem inventory, monitoring, and planning.
- <sup>3</sup> Recreation/Wilderness/Heritage includes recreation and trail construction funds.
- <sup>4</sup> Also includes recreation construction (CMFC).
- <sup>5</sup> Includes General Administration.
- <sup>6</sup> The category for Ecosystem Inventory, Monitoring, and Planning for forest-wide inventory and monitoring was created in 1996. It includes expenditures of Soil, Water, Air, Wildlife, Range, Recreation, Administration, and Land Management Planning.

**TABLE II****ACTUAL ACCOMPLISHMENTS vs. PLAN PROJECTIONS**

This table compares actual accomplishments by each fiscal year to the total activities proposed in the Forest Plan and displays the Forests' progress in reaching total to date. Since 2002 is the sixteenth year of the Plan, and the Plan objectives were based on a 10-year period, projections were extended proportionally.

ACTIVITIES	UNITS	LRMP Obj <sup>1</sup>	FY87- FY96	FY97- FY01	FY2002	% PLAN <sup>2</sup>
<b><u>RECREATION</u></b>						
Use Administration	PAOT-D <sup>3</sup>	na <sup>4</sup>	12.6 MM	6.8 MM	1.4MM	na
Trail						
-Construction/Reconstruct.	miles	130	141.5	24	8.5	134%
-Maintenance	miles	na	142.5	635	165	na
Cultural Resource						
-Inventory	acres	178,133	181,145	105,014	38,835	182%
-Evaluation	sites	na	112	176	102	na
Wilderness Administration	PAOT-D	1,984,853	1,339,000	668,000	133,600	108%
<b><u>WILDLIFE &amp; FISHERIES</u></b>						
Prescribed Burning	acres	11,840	18,713	18,985	2,883	343%
Wildlife Opening Maint.	acres	3,093	1,749	1,687	500	127%
Food Plot Maint.	acres	352	1,948	2,438	800	1,473%
Wildlife Opening Dev.	acres	384	959	143	80	308%
Food Plot Dev.	acres	90	1,127	111	27	1,406%
Wildlife Stand Improvement	acres	1,600	330	2,265	124	170%
Seeding and Planting	acres	299	2,117	2,679	261	1,691%
Pond Construction	struct	480	377	126	14	108%
Fish Cover Dev.	struct	149	322	59	40	283%
Pond Fertilization	acres	1,781	858	1,516	220	146%
<b><u>RANGE</u></b>						
Prescribed Burning	acres	29,867	1,250	391	0	5%
Brush Hogging	acres	29,867	2,698	4,150	1,340	27%
Fertilization	acres	14,933	2,898	3,290	1,390	51%
Seeding	acres	14,933	167	315	0	3%
Fencing	miles	107	7	14.9	3.5	24%
Pond Construction	struct	149	18	12	5	24%
Corral Construction	struct	32	1	2	1	13%
<b><u>SOIL AND WATER</u></b>						
Watershed Improvements	acres	371	419	167	21	164%

**TABLE II continued**

ACTIVITIES	UNITS	LRMP Obj	FY87- FY96	FY97- FY01	FY2002	% PLAN
<b><u>TIMBER</u></b>						
Exam. & Prescription	acres	1,776,000	767,843	167,626	60,551 <sup>5</sup>	55%
<b><u>FUEL TREATMENT</u></b>						
Prescribed Burning	acres	74,667	30,143	89,963	35,454	208%
<b><u>ROAD WORK</u></b>						
Reconstruction/Construction	miles	1,173	535	181	48	65%
<b><u>LANDS &amp; MINERALS</u></b>						
Mineral Leases <sup>6</sup>	leases	3,840	6,814	175	11	182%
Land Acquisition <sup>7</sup>	acres	6,400	18,710	3,276	80	345%
Land Exchange	acres	11,840	3,016	1,880	0	41%
Boundary Location	miles	1,493	503	37	8	37%
Landline Maintenance	miles	2,987	1,853	223	84	72%
Right of Way Acquisition	#'s	na	210	37	5	na

<sup>1</sup> LRMP Obj = 16 year LRMP objectives.

<sup>2</sup> % Plan = % of Forest Plan Accomplished to Date.

<sup>3</sup> PAOT-D = (People at One Time capacity) X (number of Days recreation site is open)..

<sup>4</sup> na = not assigned.

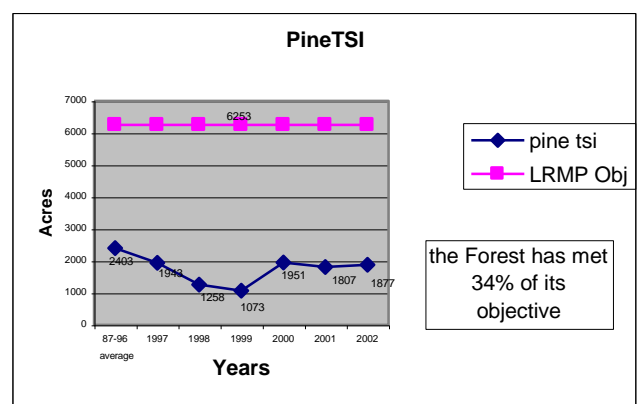
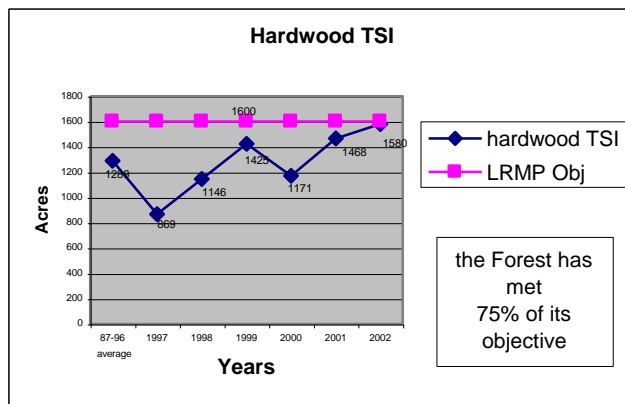
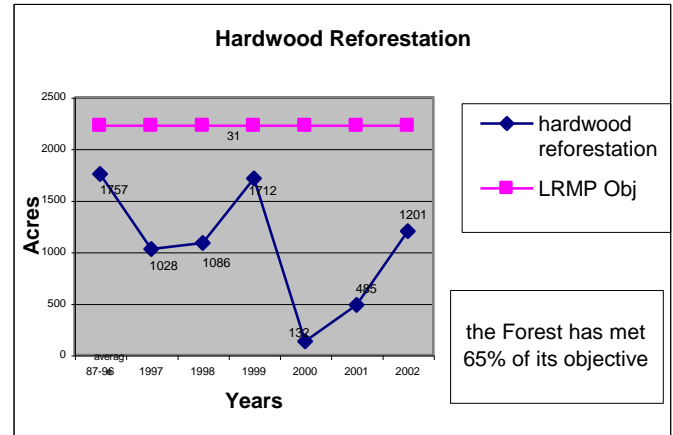
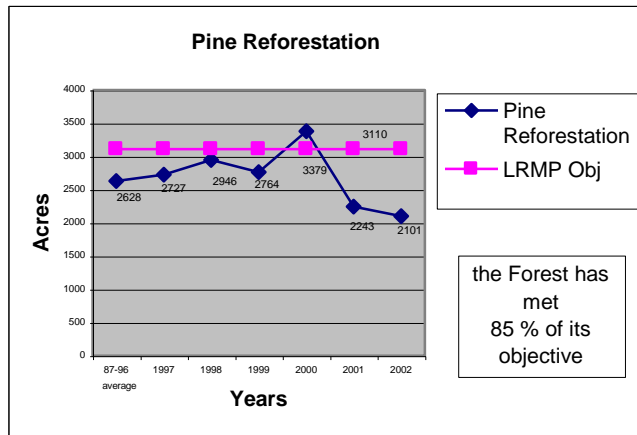
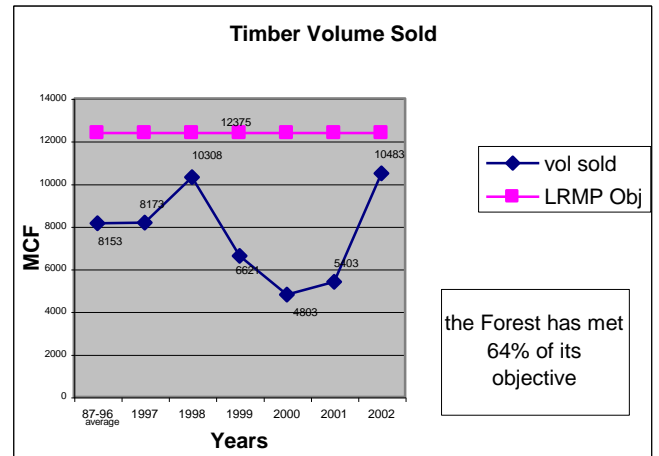
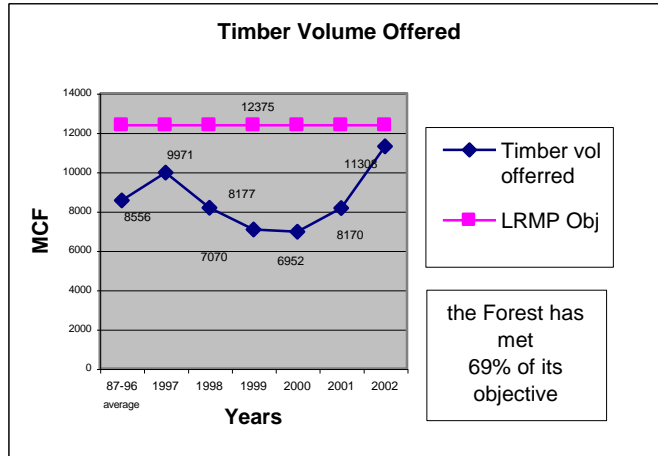
<sup>5</sup> FY 2002 accomplishments included \$23,843 acres for Tornado Restoration Project.

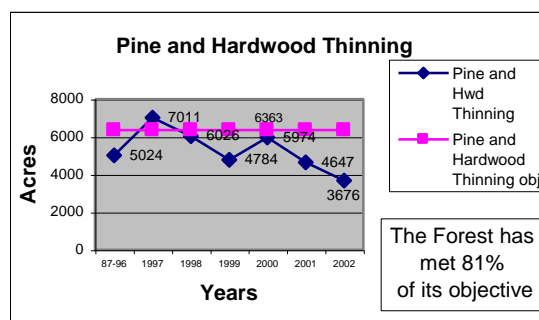
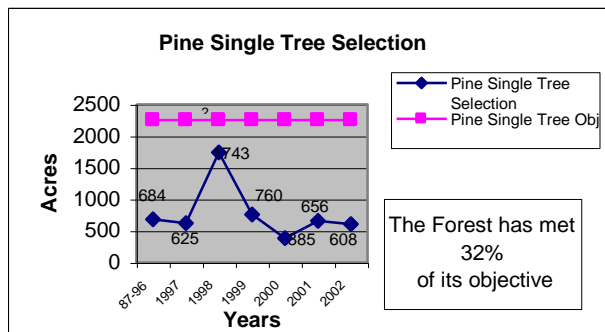
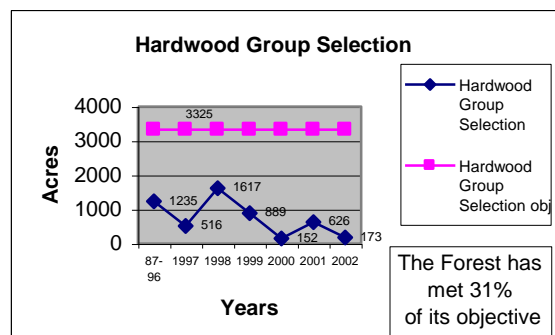
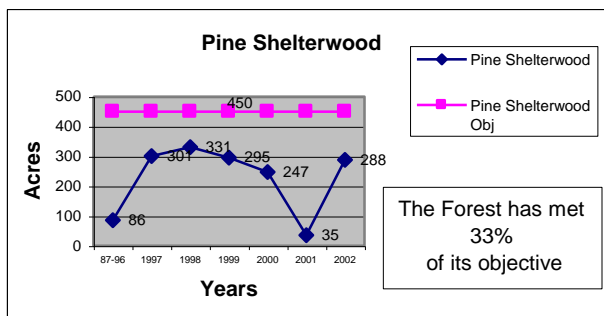
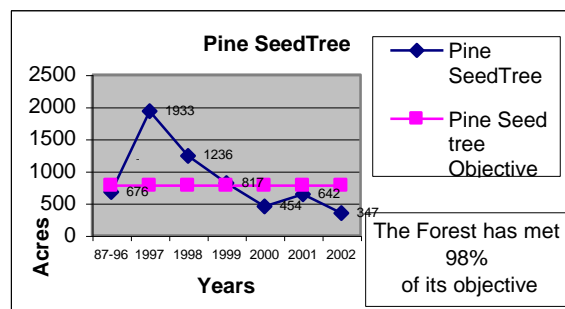
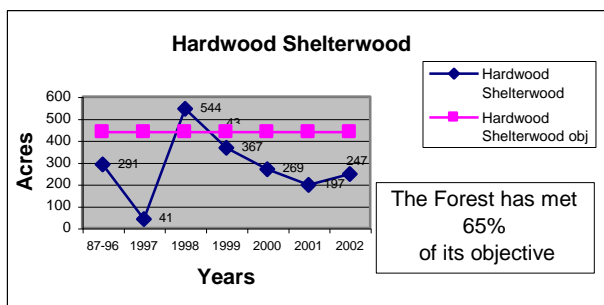
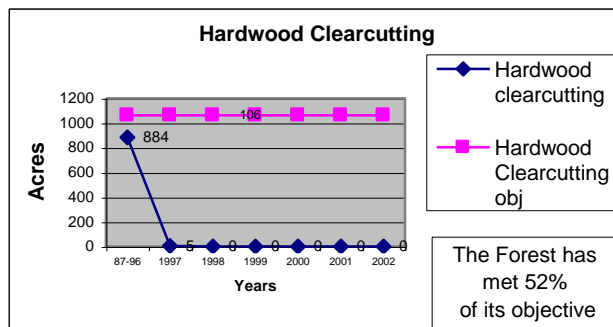
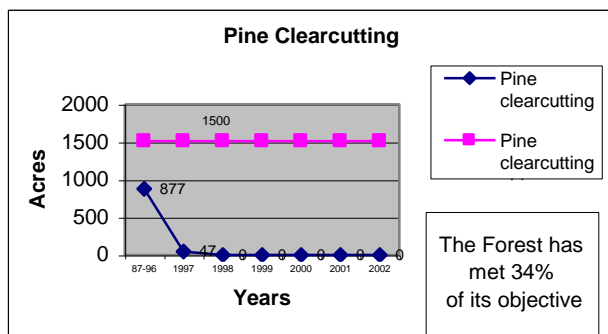
<sup>6</sup> Energy and non-energy processed.

<sup>7</sup> Includes 20 acres donated and 75 acres drug forfeiture lands transferred to USA in 1998, and 40 acres donated in 1999.

**TABLE II continued**

Comparison of **Timber's** actual accomplishments by each fiscal year to the total activities proposed in the Forest Plan. These graphs display the Forest's progress in reaching totals to date. Since 2002 is the sixteenth year of the Plan and the Plan objectives were based on a 10-year period, projections were extended proportionally. Hardwood and Pine Selection acres are gross stand acres.





### III. 2002 Monitoring and Evaluation Action Plan

This section flows out of the findings and recommendations made in the previous section. It lists the actions to be taken, including forest plan amendments or revision.

#### A. Actions Not Requiring Forest Plan Amendment or Revision

1. **Action:** Summarize herbicide monitoring results to determine corrective measures to be taken in BMP application or sampling techniques. (See Recommendation 3e, page 7)  
**Responsibility:** Watershed and Planning Staff Officer, Forest Hydrologist  
**Completion Date:** FY 2003
2. **Action:** Revise the Fire Management Action Plan. (See Recommendation 4a, page 7)  
**Responsibility:** Fire Staff Officer  
**Completion Date:** FY 2003
3. **Action:** Adjust suppression responses to fire in oak mortality areas. (See Recommendation 4b, page 8)  
**Responsibility:** Fire Staff Officer  
**Completion Date:** FY 2003
4. **Action:** Implement the Recreation Realignment Action Plan to bring developed recreation program in line with the Niche State. (See Recommendation 1n, page 10)  
**Responsibility:** Public Services Staff Officer, District Rangers  
**Completion Date:** Ongoing
5. **Action:** Stress the importance of meeting targets for timber offered, regeneration, and timber stand improvement work. (See Recommendation 2a, 2d, and 2e, page 11)  
**Responsibility:** Forest Supervisor, Ecosystem Staff Officer, District Rangers  
**Completion Date:** Ongoing
6. **Action:** Revise existing Plan direction for land acquisition that includes various resource-based priorities such as riparian areas, wetlands, and wildlife habitat.  
**Responsibility:** Technical Services Staff Officer, Forest Planners  
**Completion Date:** Plan Revision

#### B. Actions Requiring Amendment or Revision to the Forest Plan

No new actions were identified in FY 2002.

## C. Amendments to be Completed

1. **Amendment Description:** PETS Amendment – This potential amendment proposes a change in the way biological evaluations are completed. It approves changes to the language that was added through Amendment #4.  
**Responsibility:** Forest Planners  
**Proposed Date of Completion:** FY 2003/2004  
**Status:** Region has prepared a programmatic amendment to VMEIS, which does not require a Forest Plan Amendment.
2. **Amendment Description:** Classify lands acquired since Amendment 9 into Management Areas, including the new 1,510-acre Stumpy Point tract.  
**Responsibility:** Technical Services Staff Officer, Forest Planners  
**Proposed Date of Completion:** FY 2003/2004  
**Status:** Decision has not been made whether to do this amendment or wait for Plan Revision.

## D. Amendments Considered but Deferred until Completion of Forest Plan Revision

1. **Amendment Description:** MIS Amendment – This amendment proposes additional clarification regarding selection and monitoring of Management Indicator Species.  
**Responsibility:** Ecosystems Staff Officer and Watershed and Planning Staff Officer.  
**Proposed Date of Completion:** N/A  
**Status:** A review and analysis were completed in FY 2001. No changes in MIS species were recommended at this time. Further analysis will be done during Plan Revision.
2. **Amendment Description:** SIA Amendment – Amendment 5 to the Forest Plan committed the forests to evaluate additional Special Interest Areas.  
**Responsibility:** District Rangers and Forest Planners  
**Proposed Date of Completion:** FY 2003/2004  
**Status:** SIAs included in inventoried roadless areas will be analyzed during Plan Revision. Decision was not made in FY 2002, as intended, about how to resolve proposed SIAs outside roadless areas.
3. **Amendment Description:** Ecosystem restoration (Pine-Bluestem) – This potential amendment proposes restoring ecosystems to historical components.  
**Responsibility:** Forest Planners, Ecosystems Staff Officer  
**Proposed Date of Completion:** FY 2003/2004  
**Status:** Decision has not been made whether to do this or to wait for completion of Plan Revision.
4. **Amendment Description:** Increase prescribed burn acreage.  
**Responsibility:** Fire Staff Officer  
**Proposed Date of Completion:** FY 2003/2004  
**Status:** Decision has not been made whether to do this or to wait for Plan Revision.

# **APPENDIX A**

## **FOREST INTERDISCIPLINARY TEAM**

Names and positions of the Forest Monitoring and Evaluation Interdisciplinary Team who contributed to this report are listed below.

Steve Best	Forest Wildlife Biologist
Richard Bowie	Forest Landscape Architect
Jack Davis	Forest Silviculturist
Duane Dipert	Watershed and Planning Staff Officer
Howard Freerksen	Timber Sale Forester
Roger Fryar	Assistant Fire Team Leader
Rick Golden	Forest Fisheries Biologist
Greg Hatfield	Ecosystems Staff Officer
David Jurney	Heritage Program Manager
Kathy King	Writer/Editor
Ron Klouzek	Technical Services Staff Officer
Gary Knudsen	Public Services Staff Officer
Len Weeks	Forest Soil Scientist



# **APPENDIX B**

## **LIST AND DESCRIPTION OF PLAN AMENDMENTS**

1. Added language to the Forest Plan on southern pine beetle. (1987)
2. Clarifies the process and schedule for suitability studies for rivers eligible for consideration for inclusion in the National Rivers System. (1987)
3. Designated a corridor along the Ozark Highlands trail and changed the Visual Quality Objective. (1989)
4. Incorporated the methods and tools available for use in the Final EIS on vegetation management in the Ozark/Ouachita Mountains. (1990)
5. Resolves appeals to the Forest Plan, committing the Forest to different water monitoring, examination of Special Interest Areas, inventory of forest roads, modification of timber management techniques, etc. (1991)
6. Designated Dismal Hollow as a Research Natural Area. (1990)
7. Established corridors for six wild and scenic rivers. (1993)
8. Added the standards and guidelines, management direction, and goals and objectives from the wild and scenic river plans. (1996)
9. Classifies acquired lands from 1986 to 1998 into management areas. (1999)
10. Allows access to the new campgrounds in Sam's Throne SIA. (2001)
11. Allocates 300 acres of Management Area 8 to Management Area 3 on the St. Francis National Forest. (2001)

## APPENDIX C

### STATUS OF RECOMMENDATIONS AND ACTION PLAN FROM PREVIOUS MONITORING AND EVALUATING REPORTS

Many of the recommendations from previous Monitoring and Evaluation Reports are on-going activities. These are not repeated here

Following are the status of Actions from previous Monitoring and Evaluation Reports:

#### 1. Recreation, Heritage, and Wilderness

- a) **Action:** Determine if Buffalo District Limits of Acceptable Change (LAC) standards apply to the situation on Bayou and Sylamore Districts. Buffalo Ranger District needs to apply to their situation. (See Recommendation 1b, page 8.)  
**Responsibility:** Bayou, Sylamore, Buffalo District Ranger  
**Completion Date:** No completion is anticipated pending either Plan Revision or filling of Wilderness Coordinator position.  
**Status, FY 2000 M&E Report:** Nothing has been done.
- b) **Action:** Complete all management planning for Scenic Byways; complete Rotary Ann and Cove Lake facilities. (See Recommendation 1m, page 10.)  
**Responsibility:** Technical Services Staff Officer, District Rangers, Recreation Staff Officer  
**Completion Date:** FY 2000 and on-going  
**Status, FY 2001 M&E Report:** Planned completion of Rotary Ann in 2003. Planning for Scenic Byways has not been completed.
- c) **Action:** Forest Supervisor will form ID Team to develop plan for Off-Highway Vehicle (OHV) use on the forest to identify potential areas for development of OHV trails and implement Forest policy for OHV use. (See Recommendation 1e and 1i, page 9.)  
**Responsibility:** Forest Supervisor  
**Completion Date:** Unknown.  
**Status, FY 2000 M&E Report:** A team was formed and recommendations were submitted. No potential areas have been identified for development

#### 2. Forest Health

- a) **Action:** Determine the appropriate scale at which fire dependent ecosystems should be restored and develop Forest-wide management plan for restoring these communities. (See Recommendation 4a, page 7.)  
**Responsibility:** Forest Planners and Fire Management Officer  
**Completion Date:** On-going.  
**Status, FY 2001 M&E Report:** Fire planners did an initial assessment on prescribed burning needs and are continuing with an assessment of the condition class of the various communities across the forest.

### 3. Fire

- a) **Action:** Continue to implement the National Fire Plan initiative. (See Recommendation 4a, page 7.)

**Responsibility:** Fire Management (Supervisor's Office and Districts)

**Completion Date:** On-going

**Status, FY 2001 M&E Report:** Fire Team is implementing projects through prescribed burning and inventory of wildland-urban interface.

# **APPENDIX D**

## **SUMMARY OF REVIEWS**

A Regional Office visit was made in April 2002 to discuss additional changes to our National Fire Management Analysis System (NFMAS) revision.

Bill Wasley (National Law Enforcement Director) conducted an Informal Site Review in May 2001.

Forest Fire Management Staff conducted District Fire Readiness Reviews.

Timber Management conducted several unannounced audits on various districts across the Forests.

Deputy Chief Joel Holtrop, Deputy Regional Forester Ken Arney, and Forest Health Director (for Region 8) Wesley Nettleton toured the Oak Mortality damage on the Forest on 11/6/02.

# APPENDIX E

## UPDATED RESEARCH NEEDS

### Research needs previously identified:

- Evaluate the role of prescribed burning in fire-dependent and fire-associated ecological communities.
- Basic information on reptiles and amphibians of Ozark National Forest including occurrence, habitat relationships, special needs and suspected limiting factors. (on-going)
- Habitat relationships of PETS Species on the Ozark and St. Francis National Forests.
- Evaluation of minimum early successional habitat needs to support viable populations of early succession obligate birds such as Prairie Warblers, Yellow-breasted Chats and Blue-winged Warblers.
- Effects of silvicultural practices on flora and fauna in upland hardwoods with emphasis on PETS and Neotropical migratory birds. The study design for Neotropical birds should be similar to the Ouachita National Forest study but conducted in upland hardwood habitat.
- Importance of down and dead wood to wildlife in the Ozark and St. Francis National Forests.
- Evaluation of habitat needs for riparian dwelling wildlife of the Ozark and St. Francis National Forests.
- Basic information on how fires affect wildlife habitat in upland hardwood ecosystems.
- Basic inventory information on mollusks of the Ozark National Forest. This information is urgently needed since it has been discovered that the Zebra mussel is found in Lake Dardanelle. (on-going)
- Evaluation of habitat improvements for Neotropical Migrant and Native Birds. Improvements such as nest boxes, snag creation, and understory and midstory manipulation would be evaluated to see how effective they are in increasing bird populations.
- Evaluation of silvicultural activities on Cerulean Warbler habitat.
- Habitat use by endangered bats that inhabit Ozark National Forest caves. (on-going)
- Effects of ATVs on reproductive success of wildlife on the Ozark National Forest.
- Life history of the Longnose Darter (ecology and reproductive biology).
- Importance of seasonal streams to reproduction of fish in the Boston Mountains.
- Evaluation of stream habitat improvements on Smallmouth Bass in the Boston Mountains.
- Evaluate and monitor smoke impacts from prescribed burning activity.

- Inventory Forest fuels and assess impacts of oak mortality on fuel loading.
- Evaluate and monitor growing season burning effects.
- Evaluate and monitor the effects of prescribed burning in hardwood Forests on T & E species, specifically the Indiana Bat and the Red Bat.
- Inventory and evaluation of Heritage Resources (Archaeology) on all land disturbing projects.

### **Research Needs From Mid-Plan Review**

During the Mid-Plan Review in 1991, the Planning Team reviewed existing and planned research and developed additional research needs to be included in the Plan. Cooperative research with the University of Arkansas at Monticello, the Forest Experiment Stations, the Ouachita National Forest, and other partners on many projects is still underway. Future research topics recommended during the Mid-Plan Review were:

1. Large-scale, multi-resource studies to determine effects of different management practices on ecosystems.
2. Prescribed burning effects on soil productivity, characteristics, and nutrient cycling.
3. Public expectations of uneven-aged timber management.
4. Document resource demands, specific to the Ozark-St. Francis National Forests for water, recreation, wildlife, and minerals.
5. Riparian area fish and wildlife needs (habitat dependent species).
6. Old growth needs--
  - dependent species.
  - treatments for dependent species.
  - definition of Ozark-St. Francis National Forests old growth vegetation.
  - description of Pre-European settlement environment (Heritage is providing this for Little Piney Watershed and building GIS layer for Forest).
7. Habitat needs for neo-tropical migrants.
8. Habitat relationships of protected, endangered, threatened, and sensitive wildlife species.
9. Authenticated habitat capability models for management indicator and other selected species.
10. Watershed condition including stream stability determination for LRMP
11. Recreation marketing, customer surveys and analysis for dispersed recreation, developed recreation, wild and scenic rivers, scenic byways, and wilderness use.

## Recently Identified Research Needs

1. Because the severity of the red oak borer infestation is without precedent, there is a rare opportunity for research on the borer and associated insects as well as on oak regeneration. Some ideas on research needs are:
  - increase information on the distribution and extent of the existing infestation and develop models for determining spread.
  - increase knowledge on the epidemiology of the red oak borer and associated insects.
  - quantify the ecological effects of the infestation in the Ozark highlands.
  - quantify the economic impacts of red oak – speed of degradation, utilization of infested material, and visual quality (visitor concerns).
  - develop silvicultural prescriptions to rehabilitate the oak component in the overstory or to optimize the development of oak regeneration.
  - increase knowledge on the ecology of the oak ecosystem and why this red oak borer outbreak happened.
  - increase the knowledge of effects on game and non-game wildlife species from loss of hard mast. Includes migratory bird impacts.
  - determine optimum prescribed burning conditions and timing to enhance natural regeneration for red and white oaks.
  - explore the regeneration model developed in the southern Appalachians for adaptation to the Ozark Highlands.
2. Duration of past (1880-1920) and more recent (1920-1950) disturbance on stream basins and effect of current activities on stream recovery.

# APPENDIX F

## Ozark-St. Francis National Forests Niche Statement

**Setting and Value:** The Ozark-St. Francis National Forests provide much of the undeveloped public lands for outdoor recreation in Arkansas and are the closest mountains to surrounding states. The Forests offer exceptional ecological and geological diversity in large blocks of land dispersed throughout the northern half of the state. The Ozark's rich folk culture and historic sites enrich the visitor experience. The scenic mountains and adjacent plateaus offer spectacular vistas, bluffs, waterfalls, and six wild and scenic rivers. Blanchard Springs Caverns is nationally recognized as a natural wonder, and Mt. Magazine is the highest point in the state. Crowley's Ridge and the Mississippi River delta provide a lowland experience replete with bayous and oxbow lakes.

**Experiences:** The rugged landscape and water features make sightseeing, trails, and day-use focuses for the mountain and plateau sections. The Mississippi River and lakes along the delta provide special opportunities for water-related day-use. The Forests extensively partner with the State and other organizations to provide or enhance recreation opportunities.

- The Forests' Ozark Mountains provide exceptional nature-related *sightseeing* easily accessible by roads and trails. Spectacular vistas, rock bluffs, waterfalls, seasonal foliage, and wild rivers attract visitors from a wide area. Six National Scenic Byways traverse the Forests offering scenic beauty and Ozark history. Blanchard Springs Caverns offers a unique living cave experience via general tours and wild cave programs. The Forests' sightseeing attractions also provide an opportunity for visitors to learn about the Forests and their natural and cultural resources.
- **Trails** provide access to the Forests' special features. Mountain bikers find a range of terrain challenges, and horse trails are available for day and overnight visitors. Canoeing, kayaking, and rafting are seasonally popular on the Forests' six nationally designated wild and scenic rivers. The 165-mile Ozark Highlands National Recreation Trail offers long-distance hiking and backpacking. Rock climbing at Sam's Throne exemplifies the extreme challenge sought by some visitors. The Forests also provide OHV opportunities in areas where it is environmentally sustainable.
- The Forests' rivers and small lakes are very popular for water-related *day use* activities. Developed sites for picnicking, family gatherings, and water play are important elements of the experience. Short distance trails to special natural areas add to the day-use value. Forest areas near Fayetteville, Ft. Smith, Little Rock, Tulsa, Springfield, and Memphis are especially valued as urban escapes.
- The "general forest" area is well suited for dispersed recreation such as hunting and fishing. Developed and primitive camping is provided to support trail users and water-based recreation activities.

**Primary Customers:** Nearby residents, urban population centers in Arkansas and adjoining states, and destination recreationists seeking unique natural areas and specialized recreation opportunities.



